

# EXHIBIT 1B

**COMPARISON OF COMBINED RESERVOIR PMF**

CFS PMF(Max)	CFS PMF(Max)	
64,845	63,231	
Total		
Flow	Discharg'd	Difference
Normal	Predraw	CFS
15110	7885	7225
14664	8223	6441
14017	8415	5602
9572	8636	936
7549	8772	-1223
7508	8970	-1463
7491	9088	-1597
7487	9271	-1784
7491	9383	-1892
7491	9550	-2058
7498	9671	-2173
7510	9809	-2299
7495	9953	-2458
7512	10051	-2539
7519	10177	-2658
7521	10303	-2783
9226	10423	-1197
8216	10534	-2318
8451	10643	-2192
4080	10680	-6601
1787	10531	-8744
1787	10362	-8574
3981	10176	-6195
3657	9946	-6288
2716	9731	-7015
2481	9538	-7057
3910	9364	-5455
3344	9210	-5866
2205	9078	-6873
2717	8958	-6241
2717	8851	-6134
4051	8761	-4709
2717	8697	-5980
2930	8645	-5715
7517	8620	-1103
5968	8618	-2649

9504	8651	854
9013	8722	291
11269	8843	2427
12827	9080	3748
13780	9479	4301
17056	10102	6954
15714	10949	4765
16659	12120	4539
17848	13456	4393
19191	15012	4180
20677	16723	3954
22303	18498	3805
25328	20308	5021
29199	22360	6839
33469	25862	7606
37325	30660	6665
40601	35080	5521
43618	38965	4653
47171	42054	5117
52562	44272	8290
57553	48861	8692
60880	54259	6622
63018	58200	4818
64259	60735	3524
64813	62238	2575
64845	62957	1888
64628	63231	1398
64050	62867	1183
63451	62647	805
62740	62127	612
61974	61515	459
61114	60825	289
60275	60084	191
59456	59317	138
58647	58545	102
57838	57765	74
57096	57056	41
56481	56475	6
55899	55890	9
55337	55332	5
54752	54774	-22
54240	54252	-12
53627	53622	5
52944	52943	2

52209	52209	0
51194	51203	-9
50170	50168	2
49122	49132	-9
48185	48195	-10
47402	47408	-6
46849	46849	0
46583	46584	-1
46383	46383	1
45967	45966	1
45231	45233	-2
44403	44403	0
43549	43550	-1
42668	42670	-2
41771	41768	4
40790	40796	-6
39765	39766	-1
38716	38709	6
37636	37639	-3

#### **4.0 Conclusion**

The results presented above indicate that the pre-drawn reservoir provides a small benefit to the total PMF flow by reducing the peak flow by less than 2000 CFS and delays the peak by one hour.



#### 4. Flood Frequency Rating

We have used the flow data at the Edenville dam we have available from 1929 to 2011 to develop a Log-Pearson Type III probability analysis. The peak flow from each year was used in the analysis and is displayed in the attached analysis sheets. The probably was carried out to a 10,000 year event. The current capacity of our spillways, 32,000 cfs at top of dam, appears to be a 270 year storm event. We anticipate designing our in-term flood structure to achieve a total capacity close to a 1000 year event.

FLOOD FLOW FREQUENCY AT EDENVILLE DAM  
LOG-PEARSON TYPE III DISTRIBUTION

9/25/2013

Year	Peak cfs	Logarithm X	X^2	X^3
1929	17324.2	4.23865	17.9662	76.1524
1930	8392.5	3.92389	15.3969	60.4159
1931	1809.2	3.25749	10.6112	34.5659
1932	4478.6	3.65114	13.3308	48.6728
1933	7972	3.90157	15.2222	59.3905
1934	2818.7	3.45005	11.9028	41.0654
1935	5969.8	3.77596	14.2579	53.8372
1936	1851.7	3.26757	10.6770	34.8879
1937	5468	3.73783	13.9714	52.2226
1938	8985.6	3.95355	15.6305	61.7961
1939	3483.2	3.54198	12.5456	44.4363
1940	3037.6	3.48253	12.1280	42.2362
1941	3842.1	3.58457	12.8491	46.0586
1942	8019.5	3.90415	15.2424	59.5084
1943	12089.7	4.08242	16.6661	68.0380
1944	2190.3	3.34050	11.1590	37.2766
1945	14010.7	4.14646	17.1931	71.2906
1946	9389.8	3.97266	15.7820	62.6965
1947	7277.5	3.86198	14.9149	57.6011
1948	10518.8	4.02197	16.1762	65.0602
1949	1972	3.29491	10.8564	35.7709
1950	13423.4	4.12786	17.0392	70.3357
1951	4799.6	3.68121	13.5513	49.8850
1952	7478.8	3.87383	15.0066	58.1329
1953	6561.4	3.81700	14.5695	55.6116
1954	5255.1	3.72058	13.8427	51.5030
1955	7578.1	3.87956	15.0510	58.3912
1956	6780.6	3.83127	14.6786	56.2377
1957	11125.4	4.04632	16.3727	66.2490
1958	3474	3.54083	12.5375	44.3931
1959	11442.9	4.05854	16.4717	66.8511
1960	8473.9	3.92808	15.4298	60.6097
1961	4349.3	3.63842	13.2381	48.1657
1962	9170.4	3.96239	15.7005	62.2116
1963	6272.2	3.79742	14.4204	54.7603
1964	2024.8	3.30638	10.9322	36.1459
1965	9208.2	3.96417	15.7147	62.2957
1966	4370.3	3.64051	13.2533	48.2489
1967	6707.5	3.82656	14.6426	56.0307
1968	6905.2	3.83918	14.7393	56.5867
1969	7091.8	3.85076	14.8283	57.1003
1970	9132.6	3.96059	15.6863	62.1271

1971	6078.3	3.78378	14.3170	54.1724
1972	6123.7	3.78701	14.3415	54.3114
1973	6453.6	3.80980	14.5146	55.2977
1974	8397.3	3.92414	15.3989	60.4273
1975	6994.7	3.84477	14.7822	56.8343
1976	7968.1	3.90135	15.2206	59.3808
1977	1810.4	3.25777	10.6131	34.5751
1978	4388.7	3.64234	13.2666	48.3215
1979	4644.1	3.66690	13.4462	49.3058
1980	2729.3	3.43605	11.8064	40.5676
1981	5721.2	3.75749	14.1187	53.0509
1982	4924.4	3.69235	13.6335	50.3396
1983	6426.6	3.80798	14.5007	55.2185
1984	5789.3	3.76263	14.1574	53.2688
1985	8048.6	3.90572	15.2547	59.5804
1986	10121.8	4.00526	16.0421	64.2527
1987	2005	3.30211	10.9040	36.0061
1988	7000.2	3.84511	14.7849	56.8495
1989	8789.3	3.94395	15.5548	61.3473
1990	6835.2	3.83475	14.7053	56.3912
1991	5916.4	3.77206	14.2284	53.6704
1992	7752.3	3.88943	15.1277	58.8380
1993	5784.2	3.76224	14.1545	53.2526
1994	3352.7	3.52539	12.4284	43.8150
1995	4203.5	3.62361	13.1306	47.5800
1996	11903.4	4.07567	16.6111	67.7014
1997	4113.1	3.61417	13.0622	47.2091
1998	7530.1	3.87680	15.0296	58.2667
1999	4195.4	3.62277	13.1245	47.5470
2000	6543.1	3.81578	14.5602	55.5586
2001	6263.9	3.79684	14.4160	54.7354
2002	6226.4	3.79424	14.3962	54.6227
2003	2066.5	3.31524	10.9908	36.4370
2004	4769.9	3.67851	13.5314	49.7755
2005	6023	3.77981	14.2870	54.0021
2006	2512	3.40002	11.5601	39.3047
2007	8677.9	3.93841	15.5111	61.0892
2008	5338.5	3.72742	13.8937	51.7875
2009	5570.4	3.74589	14.0317	52.5610
2010	4195.4	3.62277	13.1245	47.5470
2011	9423.5	3.97421	15.7944	62.7702

83	sum =	311.94585	1176.5431	4452.4228
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Stand. Dev.	S =	Mean X =	3.7584	Skew Coef. =	-0.5847
				Weighted Skew =	0.69



FLOOD FLOW FREQUENCY AT EDENVILLE DAM  
LOG-PEARSON TYPE III DISTRIBUTION

9/25/2013

RECURRING FREQUENCY FLOWS

Recurrence	K for Wt. Skew	Log Q	Q, cfs
0.5, 2 year	-0.09693	3.73663	5450
0.33, 3 year	0.35094	3.83715	6870
0.2, 5 year	0.80084	3.93813	8670
0.1, 10 year	1.32767	4.05638	11390
0.05, 20 year	1.79353	4.16094	14490
0.02, 50 year	2.35189	4.28626	19330
0.01, 100 year	2.74452	4.37439	23680
0.005, 200 year	3.11835	4.45829	28730
0.002, 500 year	3.59015	4.56419	36660
0.001, 1000 year	3.93352	4.64126	43780
0.0002, 5000 year	4.8263	4.84164	69440
0.0001, 10000 year	5.01264	4.88347	76470
Return period for existing gate capacity of 32,000 cfs			
0.0037, 270 year	3.32776	4.50515	32000